GenCore version 4.5

OM protein - protein search, using sw model

Run on: March 1, 2001, 15:47:15 ; Search time 210.42 Seconds
(without alignments)
11.213 Million cell updates/sec

Title: US-09-331-631A-5_COPY_76_144
Perfect score: 381
Sequence: 1 NRQRDPQQQYEQCQKRCQRR.....EEQQREDEEKYEERMKEGDN 69

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 268485 seqs, 34193795 residues

Total number of hits satisfying chosen parameters: 268485

Minimum DB seq *length*: 0
Maximum DB *seq length*: 2000000000

Post-*processing*: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_36:*
1: /SIDS1/gcgdata/geneseq/geneseqp/AA1980.DAT:*
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11: /SIDS1/gcgdata/geneseq/geneseqp/AA1990.DAT:*
12: /SIDS1/gcgdata/geneseq/geneseqp/AA1991.DAT:*
13: /SIDS1/gcgdata/geneseq/geneseqp/AA1992.DAT:*
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21: /SIDS1/gcgdata/geneseq/geneseqp/AA2000.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

esult No.	Score	% Query Match	Length	DB	ID	Description
1	381	100.0	625	19	W62830	Macadamia integrif
2	363	95.3	666	19	W62828	Macadamia integrif
3	359	94.2	666	19	W62829	Macadamia integrif
4	173	45.4	525	19	W62831	Theobroma cacao an
5	173	45.4	566	13	R20181	Sequence encoded b
6	152.5	40.0	590	19	W62832	Gossypium hirsutum
7	103	27.0	1898	20	Y30795	A human trichohyal
8	102	26.8	1162	21	Y58500	HHV8 ORF 73 protei
9	97.5	25.6	1135	21	Y68784	Amino acid sequenc
10	97.5	25.6	1233	20	Y55954	Mouse STE20-relate
11	97.5	25.6	1239	20	Y55931	Human ZC1 protein.
12	97	25.5	482	20	Y07067	Renal cancer assoc
13	97	25.5	1297			
14	96	25.2	1360			
15	95.5	25.1	1326	2		
16	95	24.9	444	20		
17	95	24.9	524	20		
18	94.5	24.8	611	20		
19	93	24.4	2023	21	Y54	
20	93	24.4	2074	21	Y5431	
21	90.5	23.8	409	20	W90342	
22	90.5	23.8	489	20	W90341	
23	89	23.4	346	20	Y20115	
24	89	23.4	373	20	Y20114	
25	89	23.4	593	19	W62835	
26	88	23.1	1197	21	Y57445	
27	88	23.1	1658	21	Y57450	
28	86.5	22.7	562	16	R70491	
29	85.5	22.4	740	13	R27530	
30	85.5	22.4	740	16	R68838	
31	85	22.3	910	20	Y22191	
32	85	22.3	1214	21	Y57444	
33	85	22.3	1715	21	Y57449	
34	84.5	22.2	1299	21	Y58633	
35	84	22.0	200	18	W55301	
36	84	22.0	200	18	W20685	
37	84	22.0	529	18	W55444	
38	84	22.0	1382	18	W31867	
39	83.5	21.9	303	15	R60054	
40	83.5	21.9	326	20	Y20119	
41	83.5	21.9	359	20	Y20118	
42	82.5	21.7	432	20	W93954	
43	82	21.5	301	8	P70867	
44	82	21.5	648	20	Y32157	
45	82	21.5	1144	20	Y32154	

Human ZC2 protein.
Human protein kina
Human ZC3 protein.
Human truncated S
G. max SBP1 protei
T. gondii immunoge
Amino acid sequenc
Amino acid sequenc
max truncated S
SBP2 protei
feri ant
Pi ant
H. Fo
H. py
H. pyl
Human me
Dirofilari
B. burgdorf
B. burgdorfe ant
Human regulatory m
Sequence of acidic
Human SH3D1A prote
Human SH3D1A prote

ALIGNMENTS

RESULT 1
W62830
ID W62830 standard; Protein; 625 AA.
XX
AC W62830;
XX
DT 27-OCT-1998 (first entry)
XX
DE Macadamia integrifolia antimicrobial protein.
XX
KW antimicrobial protein; infestation; control.
XX
OS Macadamia integrifolia.
XX
FH Key Location/Qualifiers
FT Peptide 1..28
FT /note= "signal peptide"
FT Protein 29..666
FT /note= "mature protein"
XX
PN WO9827805-A1.
XX
PD 02-JUL-1998.
XX
PF 22-DEC-1997; 97WO-AU00874.
XX
PR 20-DEC-1996; 96AU-0004275.
XX
PA (RETR-) COOP RES CENT TROPICAL PLANT PATHOLOGY.
XX
PI Bower NI, Goulter KC, Green JL, Manners JM, Marcus JP;
XX
DR WPI; 1998-377279/32.
DR N-PSDB; V42316.
XX

Novel anti-microbial protein from e.g. Macadamia integrifolia - useful for controlling microbial infestations of plants or mammals

Claim 1; Page 43-45; 96pp; English.

The sequence is that of an antimicrobial protein which can be used to control microbial infestations in plants and mammalian animals.

Sequence 625 AA;

```
Query Match             100.0%;  Score 381;  DB 19;  Length 625;
Best Local Similarity   100.0%;  Pred. No. 1.8e-30;
Matches   69;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 NRQRDPQQQYEQCQKRCQRRETEPRHMQICQQRCERRYEKEKRKQQKRYEEQQREDEEKY 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      76 nrqrdpqqqyeqcqkrcqrreteprhmqicqqrcerryekekrkqqkryeeqqredeeky 135

Qy       61 EERMKEGDN 69
           |||||||||
Db      136 eermkegdn 144
```

```
RESULT   2
W62828
ID   W62828 standard; Protein; 666 AA.
XX
AC   W62828;
XX
DT   27-OCT-1998  (first entry)
XX
DE   Macadamia integrifolia antimicrobial protein.
XX
KW   antimicrobial protein; infestation; control.
XX
OS   Macadamia integrifolia.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..28
FT                   /note= "signal peptide"
FT   Protein         29..666
FT                   /note= "mature protein"
FT
XX
PN   WO9827805-A1.
XX
PD   02-JUL-1998.
XX
PF   22-DEC-1997;    97WO-AU00874.
XX
PR   20-DEC-1996;    96AU-0004275.
XX
PA   (RETR-) COOP RES CENT TROPICAL PLANT PATHOLOGY.
XX
PI   Bower NI,  Goulter KC,  Green JL,  Manners JM,  Marcus JP;
XX
DR   WPI; 1998-377279/32.
DR   N-PSDB; V42310.
XX
PT   Novel anti-microbial protein from e.g. Macadamia integrifolia -
PT   useful for controlling microbial infestations of plants or mammals
XX
PS   Claim 1; Page 34-36; 96pp; English.
XX
CC   The sequence is that of an antimicrobial protein which can
CC   be used to control microbial infestations in plants and mammalian
CC   animals.
XX
SQ   Sequence   666 AA;

Query Match             95.3%;  Score 363;  DB 19;  Length 666;
Best Local Similarity   95.7%;  Pred. No. 1.2e-28;
Matches   66;  Conservative    0;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 NRQRDPQQQYEQCQKRCQRRETEPRHMQICQQRCERRYEKEKRKQQKRYEEQQREDEEKY 60
           |||||||||||||||| |||||||||||| |||||||||||||||||||||||||||||||
Db     117 nrqrdpqqqyeqcqkhcqrreteprhmqtcqqrcerryekekrkqqkryeeqqredeeky 176

Qy       61 EERMKEGDN 69
           |||||| ||
Db     177 eermkeedn 185
```

```
RESULT   3
W62829
ID   W62829 standard; Protein; 666 AA.
XX
AC   W62829;
XX
DT   27-OCT-1998  (first entry)
XX
DE   Macadamia integrifolia antimicrobial protein.
XX
KW   antimicrobial protein; infestation; control.
XX
OS   Macadamia integrifolia.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..28
FT                   /note= "signal peptide"
FT   Protein         29..666
FT                   /note= "mature protein"
FT
XX
PN   WO9827805-A1.
XX
PD   02-JUL-1998.
XX
PF   22-DEC-1997;    97WO-AU00874.
XX
PR   20-DEC-1996;    96AU-0004275.
XX
PA   (RETR-) COOP RES CENT TROPICAL PLANT PATHOLOGY.
XX
PI   Bower NI,  Goulter KC,  Green JL,  Manners JM,  Marcus JP;
XX
DR   WPI; 1998-377279/32.
DR   N-PSDB; V42311.
XX
PT   Novel anti-microbial protein from e.g. Macadamia integrifolia -
PT   useful for controlling microbial infestations of plants or mammals
XX
PS   Claim 1; Page 39-41; 96pp; English.
XX
CC   The sequence is that of an antimicrobial protein which can
CC   be used to control microbial infestations in plants and mamm
CC   animals.
XX
SQ   Sequence   666 AA;

Query Match             94.2%;  Score 359;  DB 19;
Best Local Similarity   94.2%;  Pred. No. 2.9e-
Matches   65;  Conservative    1;  Mismatches

Qy       1 NRQRDPQQQYEQCQKRCQRRETEPRHMQICQQR
           ||||||||||||||:|||| |||||||| ||
Db     117 nrqrdpqqqyeqcqercqrheteprhmqt

Qy       61 EERMKEGDN 69
           |||||| ||
Db     177 eermkeedn 185

RESULT   4
```

W62831
ID W62831 standard; Protein; 525 AA.
XX
AC W62831;
XX
DT 27-OCT-1998 (first entry)
XX
DE Theobroma cacao antimicrobial protein.
XX
KW antimicrobial protein; infestation; control.
XX
OS Theobroma cacao.
XX
PN WO9827805-A1.
XX
PD 02-JUL-1998.
XX
PF 22-DEC-1997; 97WO-AU00874.
XX
PR 20-DEC-1996; 96AU-0004275.
XX
PA (RETR-) COOP RES CENT TROPICAL PLANT PATHOLOGY.
XX
PI Bower NI, Goulter KC, Green JL, Manners JM, Marcus JP;
XX
DR WPI; 1998-377279/32.
XX
PT Novel anti-microbial protein from e.g. Macadamia integrifolia -
PT useful for controlling microbial infestations of plants or mammals
XX
PS Claim 1; Page 47-49; 96pp; English.
XX
CC The sequence is that of an antimicrobial protein which can
CC be used to control microbial infestations in plants and mammalian
CC animals.
XX
SQ Sequence 525 AA;

Query Match 45.4%; Score 173; DB 19; Length 525;
Best Local Similarity 32.6%; Pred. No. 6.7e-10;
Matches 31; Conservative 17; Mismatches 15; Indels 32; Gaps 1;

Qy 3 QRDPQQQYEQCQKRCQRRETEPRHMQICQQRCERRYEKEKRKQQ---------- 46
:|||:|||||||:||: || | : |:||||| |::::|:|:
Db 35 erdprqqyeqcqrrceseateereqeqceqrcereykeqqrqqeeelqrqyqqcqgrcqe 94

Qy 47 ----------KRYEEQQREDEEKYEERMK 65
::|:||:| : | | |
Db 95 qqqgqreqqqcqrkcweqykeqergehenyhnhkk 129

RESULT 5
R20181
ID R20181 standard; Protein; 566 AA.
XX
AC R20181;
XX
DT 16-APR-1992 (first entry)
XX
DE Sequence encoded by 67 kD T. cacao protein cDNA.
XX
KW Cocoa; flavour; vicilin; seed storage protein.
XX
OS Theobroma cacao.
XX
PN WO9119801-A.
XX
PD 26-DEC-1991.
XX
PF 07-JUN-1991; 91WO-GB00914.
XX
PR 11-JUN-1990; 90GB-0013016.
XX
PA (MRSC) MARS UK LTD.
XX
PI Spencer ME, Hodge R, Deakin EA, Ashton S;
XX
DR WPI; 1992-024418/03.
DR N-PSDB; Q20377.
XX
PT Recombinant cocoa proteins - are responsible for flavour in cocoa
PT beans and produced in large quantities using yeast and bacterial
PT expression vectors
XX
PS Claim 4; Fig 2; 59pp; English.
XX
CC The inventors claim a 67 kD and 31 kD T. cacao protein, and
CC fragments, and encoding DNAs. The 47 kD and 31 kD proteins are
CC derived from the 67 kD precursor. T. cacao protein cDNA was
CC detected in a cDNA library prepared from immature cocoa beans RNA
CC using a probe based on the AA sequence of a CNBr peptide common to
CC the 47 kD and 31 kD polypeptides. Homology searches revealed close
CC homologies between the 67 kD polypeptide and the vicilins, which are
CC seed storage proteins.
XX
SQ Sequence 566 AA;

Query Match 45.4%; Score 173; DB 13; Length 566;
Best Local Similarity 32.6%; Pred. No. 7.2e-10;
Matches 31; Conservative 17; Mismatches 15; Indels 32; Gaps 1;

Qy 3 QRDPQQQYEQCQKRCQRRETEPRHMQICQQRCERRYEKEKRKQQ---------- 46
:|||:|||||||:||: || | : |:||||| |::::|:|:
Db 35 erdprqqyeqcqrrceseateereqeqceqrcereykeqqrqqeeelqrqyqqcqgrcqe 94

Qy 47 ----------KRYEEQQREDEEKYEERMK 65
::|:||:| : | | |
Db 95 qqqgqreqqqcqrkcweqykeqergehenyhnhkk 129

RESULT 6
W62832
ID W62832 standard; Protein; 590 AA.
XX
AC W62832;
XX
DT 27-OCT-1998 (first entry)
XX
DE Gossypium hirsutum antimicrobial protein.
XX
KW antimicrobial protein; infestation; control.
XX
OS Gossypium hirsutum.
XX
PN WO9827805-A1.
XX
PD 02-JUL-1998.
XX
PF 22-DEC-1997; 97WO-AU00874.
XX
PR 20-DEC-1996; 96AU-0004275.
XX
PA (RETR-) COOP RES CENT TROPICAL PLANT PATHOLOGY.
XX
PI Bower NI, Goulter KC, Green JL, Manners JM, Marcus JP;
XX
DR WPI; 1998-377279/32.
XX
PT Novel anti-microbial protein from e.g. Macadamia integrifolia -
PT useful for controlling microbial infestations of plants or mammals
XX
PS Claim 1; Page 49-51; 96pp; English.
XX
CC The sequence is that of an antimicrobial protein which can

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CC   be used to control microbial infestations in plants and mammalian
CC   animals.
XX
SQ   Sequence   590 AA;


  Query Match             40.0%;  Score 152.5;  DB 19;  Length 590;
  Best Local Similarity   35.3%;  Pred. No. 8.2e-08;
  Matches   30;  Conservative   18;  Mismatches   18;  Indels   19;  Gaps    2;

Qy       1 NRQRDPQQQYEQCQKRCQRRETEPRHMQICQQRCERRYEKEKRKQQKRYEEQQ------- 53
           :|  |||::||:||: |  |: | |    ||||| :|:|:|::: |::::| |
Db      78 hrpedpqrryeecqqec--rqqeerqqpqcqqrclkrfeqeqqqsqrqfqecqqhchqqe 135

Qy      54 ----------REDEEKYEERMKEGD 68
                    ||  |||:|    |:
Db     136 qrpekkqqcvrecrekyqenpwrge 160


RESULT   7
Y30795
ID   Y30795 standard; Protein; 1898 AA.
XX
AC   Y30795;
XX
DT   25-NOV-1999  (first entry)
XX
DE   A human trichohyalin (TRHY) protein.
XX
KW   Human; trichohyalin; TRHY; protein; tissue structure; wound healing;
KW   terminally differentiating epidermal tissue; proteinaceous gel;
KW   breast implant.
XX
OS   Homo sapiens.
XX
PN   US5958752-A.
XX
PD   28-SEP-1999.
XX
PF   14-FEB-1997;   97US-0800644.
XX
PR   30-APR-1993;   93US-0056200.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Kim I,  Chung S,  Park S,  Steinert PM,  Lee S;
XX
DR   WPI; 1999-561041/47.
DR   N-PSDB; Z22301.
XX
PT   Human trichohyalin useful for forming a proteinaceous gel that promotes
PT   wound healing -
XX
PS   Disclosure; Fig 3A-W; 126pp; English.
XX
CC   The present sequence represents a human trichohyalin (TRHY) protein.
CC   The protein is found in terminally differentiating epidermal tissue,
CC   and is involved in forming the structural architecture of such
CC   tissue. The trichohyalin protein is useful for forming a
CC   proteinaceous gel which may then be used for healing wounds, or in
CC   breast implants.
XX
SQ   Sequence   1898 AA;


  Query Match             27.0%;  Score 103;  DB 20;  Length 1898;
  Best Local Similarity   31.0%;  Pred. No. 0.023;
  Matches   22;  Conservative   23;  Mismatches   20;  Indels    6;  Gaps    1;

Qy       2 RQRDPQQQYEQCQK------RCQRRETEPRHMQICQQRCERRYEKEKRKQQKRYEEQQRE 55
           |||: |:: || :|      | :|:| | :  :: :::  || ::|:|::|:    :|:|
Db     267 rqrelqeeeeqlrklerqelrrerqeeeqqqqrlrreqqlrrkqeeerreqqeerreqqe 326

Qy      56 DEEKYEERMKE 66
             |: ||| ::
Db     327 rreqqeerreq 337


RESULT   8
Y58500
ID   Y58500 standard; Protein; 1162 AA.
XX
AC   Y58500;
XX
DT   10-APR-2000  (first entry)
XX
DE   HHV8 ORF 73 protein, SEQ ID NO:21.
XX
KW   HHV8; detection; diagnosis; Kaposi's sarcoma; AIDS; immunogen;
KW   antigen.
XX
OS   Human herpesvirus type 8.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 96
FT                   /label= unknown
XX
PN   WO9961909-A2.
XX
PD   02-DEC-1999.
XX
PF   26-MAY-1999;   99WO-US11407.
XX
PR   26-MAY-1998;   98US-0086695.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Pau CP;
XX
DR   WPI; 2000-097142/08.
XX
PT   New methods and compositions for the detection of human herpesvirus  -
XX
PS   Claim 2; Page 59-62; 68pp; English.
XX
CC   Sequences Y58480-Y58532 represent immunogenic polypeptides derived from
CC   human herpes virus type 8 (HHV8, a gammaherpesvirus). HHV8 plays an
CC   important role in the pathogenesis of AIDS-related Kaposi's sarcoma. The
CC   invention relates to a novel method of detecting the presence of human
CC   herpesvirus 8 in a biological sample using peptides representative of
CC   dominant antigenic regions of HHV8. The method comprises contacting one
CC   or more isolated, immunogenic HHV8 peptides with an antibody-containing
CC   biological sample, and detecting the formation of a complex between the
CC   peptide and the antibody. The presence of a peptide-antibody complex
CC   indicates the presence of human herpesvirus 8. The detection of HHV8
CC   infection can be used to diagnose AIDS-associated Kaposi's sarcoma. The
CC   HHV8-specific antibodies are useful therapeutically when for the passive
CC   immunisation of a human against HHV8 infection, thereby reducing HHV8
CC   related disease. The detection assays are highly specific, sensitive and
CC   accurate. Early detection and treatment of Kaposi's sarcoma could
CC   diminish the severity of symptoms related to AIDS and the sensitive
CC   techniques could reduce erroneous characterisations of skin disorders.
CC   Previous assays for HHV8 antibodies such as immunofluorescence assays,
CC   immunoblots and enzyme immunosassays lack the sensitivity and accuracy
CC   needed for reliable diagnosis of Kaposi's sarcoma. Further advantages
CC   of the assays are that reproducible results are obtained and the method
CC   is suitable for rapid throughput and screening of samples economically.
XX
SQ   Sequence   1162 AA;


  Query Match             26.8%;  Score 102;  DB 21;  Length 1162;
  Best Local Similarity   31.3%;  Pred. No. 0.017;
  Matches   21;  Conservative   24;  Mismatches   22;  Indels    0;  Gaps    0;

Qy       2 RQRDPQQQYEQCQKRCQRRETEPRHMQICQQRCERRYEKEKRKQQKRYEEQQREDEEKYE 61
```

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          :|:| ||| || |   |: | | :  |  |   |:: |::: :||:: |:||::::::: :
Db    680 qqqdeqqqdeqqqdeqqqdeqeqqdeqeqqdeqeqqdeqqqdeqqqqdeqqqqdeqqqqd 739

Qy     62 ERMKEGD 68
          |: :: :
Db    740 eqqqqde 746


RESULT   9
Y68784
ID   Y68784 standard; Protein; 1135 AA.
XX
AC   Y68784;
XX
DT   16-MAY-2000  (first entry)
XX
DE   Amino acid sequence of a human phosphorylation effector PHSP-16.
XX
KW   Human; phosphorylation effector; PHSP; proliferative disorder;
KW   immune disorder; neuronal disorder.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Modified-site   9
FT                   /note= "potential phosphorylation site"
FT   Modified-site   17
FT                   /note= "potential phosphorylation site"
FT   Region          31..54
FT                   /note= "protein kinase signature sequence"
FT   Modified-site   33
FT                   /note= "potential glycosylation site"
FT   Modified-site   59
FT                   /note= "potential phosphorylation site"
FT   Modified-site   59
FT                   /note= "potential phosphorylation site"
FT   Modified-site   77
FT                   /note= "potential phosphorylation site"
FT   Modified-site   112
FT                   /note= "potential phosphorylation site"
FT   Modified-site   124
FT                   /note= "potential phosphorylation site"
FT   Region          129..182
FT                   /note= "protein kinase signature sequence"
FT   Region          149..161
FT                   /note= "protein kinase signature sequence"
FT   Modified-site   187
FT                   /note= "potential phosphorylation site"
FT   Active-site     190..200
FT                   /note= "tyrosine kinase catalytic site"
FT   Active-site     214..236
FT                   /note= "tyrosine kinase catalytic site"
FT   Modified-site   222
FT                   /note= "potential phosphorylation site"
FT   Modified-site   255
FT                   /note= "potential phosphorylation site"
FT   Modified-site   259
FT                   /note= "potential phosphorylation site"
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FT   Modified-site   309
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FT                   /note= "potential phosphorylation site"
FT   Modified-site   815
FT                   /note= "potential phosphorylation site"
FT   Domain          836..1115
FT                   /note= "NIK1-like kinase domain"
FT   Modified-site   898
FT                   /note= "potential phosphorylation site"
FT   Modified-site   931
FT                   /note= "potential phosphorylation site"
FT   Modified-site   958
FT                   /note= "potential phosphorylation site"
FT   Modified-site   978
FT                   /note= "potential phosphorylation site"
FT   Modified-site   999
FT                   /note= "potential phosphorylation site"
FT   Modified-site   1012
FT                   /note= "potential phosphorylation site"
FT   Modified-site   1067
FT                   /note= "potential glycosylation site"
FT   Modified-site   1113
FT                   /note= "potential phosphorylation site"
XX
PN   WO200006728-A2.
XX
PD   10-FEB-2000.
XX
PF   28-JUL-1999;   99WO-US17132.
XX
PR   28-JUL-1998;   98US-0123494.
PR   14-SEP-1998;   98US-0152814.
PR   14-OCT-1998;   98US-0173482.
PR   03-NOV-1998;   98US-0106889.
PR   19-NOV-1998;   98US-0109093.
PR   22-DEC-1998;   98US-0113796.
PR   12-JAN-1999;   99US-0173482.
PR   12-JAN-1999;   99US-0229005.
XX
```

```
PA   (INCY-) INCYTE PHARM INC.
XX
PI   Hillman JL,  Lal P,  Tang YT,  Corley NC,  Guegler KJ,  Baughn MR;
PI   Patterson C,  Bandman O,  Au-Young J,  Gorgone GA,  Yue H,  Azimzai Y;
PI   Reddy R,  Lu DAM,  Shih LL;
XX
DR   WPI; 2000-183125/16.
DR   N-PSDB; Z46153.
XX
PT   New human phosphorylation effectors useful for the diagnosis, treatment
PT   and prevention of proliferative, immune and neuronal disorders  -
XX
PS   Claim 1; Page 98-100; 142pp; English.
XX
CC   Y68769-95 and Y68797-99 represent human phosphorylation effectors (PHSP),
CC   designated PHSP1-PHSP31 (the protein sequence for PHSP28 is not given
CC   in the specification). The sequences were isolated from cDNA libraries
CC   prepared from various human tissues. The PHSP proteins are useful for
CC   the diagnosis, treatment and prevention of proliferative disorders,
CC   immune disorders and neuronal disorders. The PHSP proteins form
CC   pharmaceutical compositions which useful for treating or preventing
CC   disorders associated with decreased PHSP expression/activity. PHSP
CC   antagonists are useful for treating or preventing disorders associated
CC   with increased PHSP expression/activity.
XX
SQ   Sequence   1135 AA;


  Query Match             25.6%;  Score 97.5;  DB 21;  Length 1135;
  Best Local Similarity   39.2%;  Pred. No. 0.047;
  Matches   29;  Conservative   17;  Mismatches   17;  Indels   11;  Gaps    4;

Qy       2 RQRDPQQQYEQCQK--RCQRRETEPRHMQICQQRCERRYEKEKRK----QQKRYEEQQR- 54
           ||:  :|| || ::    |||| | |  |  :||  || ::|||:    :::| ||::|
Db     395 rqkrieqqkeqrrrleeqqrrerearrqqereqr--rreqeekrrleelerrrkeeeerr 452

Qy      55 --EDEEKYEERMKE 66
             |:|::  || :|
Db     453 raeeekrrvereqe 466


RESULT  10
Y55954
ID   Y55954 standard; Protein; 1233 AA.
XX
AC   Y55954;
XX
DT   18-FEB-2000  (first entry)
XX
DE   Mouse STE20-related protein kinase NIK_m.
XX
KW   Antirheumatic; antiathritic; antiinflammatory; antiallergic; osteopathic;
KW   antipsoriatic; antiarteriosclerotic; antiasthmatic; immunosupressive;
KW   neuroprotective; cardiant; cerebroprotective; cytostatic; antidiabetic;
KW   vulnery; STE20; protein kinase; STLK2; STLK3; STLK4; STLK5, STLK6, STLK7;
KW   ZC1, ZC2, ZC3, ZC4, KHS2, SULU1, SULU3, GEK2, PAK4; PAK5; antagonist;
KW   antibody; gene therapy; rheumatoid arthritis; artherosclerosis; asthma;
KW   inflammatory bowel disease; Crohn's disease; osteoarthritis; psoriasis;
KW   rhinitis; autoimmunity; organ transplantation; multiple sclerosis;
KW   myocardial infarction; cardiovascular disease; stroke; renal failure;
KW   oxidative stress-related neurodegenerative disorder; Parkinson's disease;
KW   amylotrophic lateral sclerosis; Leigh syndrome; cancer; cardiomyopathy;
KW   ischemic disorder; inflammation; diabetes mellitus; fibrosis; mitosis;
KW   mesangial disorder; growth regulation; wound healing; T cell activation;
KW   immunosuppressant.
XX
OS   Mus sp.
XX
PN   WO9953036-A2.
XX
PD   21-OCT-1999.
XX
PF   13-APR-1999;   99WO-US08150.
XX
PR   14-APR-1998;   98US-0081784.
XX
PA   (SUGE-) SUGEN INC.
XX
PI   Plowman G,  Martinez R,  Whyte D;
XX
DR   WPI; 1999-611301/52.
XX
PT   Novel kinase-related polypeptides used for the diagnosis and treatment
PT   of kinase-related diseases and disorders  -
XX
PS   Disclosure; Page 339-343; 387pp; English.
XX
CC   This sequence represents a novel STE20-related protein kinase. The
CC   invention relates to nucleic acid molecule encoding a kinase polypeptide
CC   selected from STLK2, STLK3, STLK4, STLK5, STLK6, STLK7, ZC1, ZC2, ZC3,
CC   ZC4, KHS2, SULU1, SULU3, GEK2, PAK4 and PAK5. The proteins are used to
CC   identify agonists and antagonists, and to raise antibodies. The
CC   polynucleotides are useful in gene therapy protocols.The polynucleotides,
CC   polypeptides, antibodies, antagonists and agonists may be used to treat
CC   diseases such as immune-related disorders and diseases (e.g. rheumatoid
CC   arthritis, artherosclerosis, chronic inflammatory bowel disease (e.g.
CC   Crohn's disease), asthma, osteoarthritis, psoriasis, atherosclerosis,
CC   rhinitis, autoimmunity, and organ transplantation, chronic inflammatory
CC   pelvic disease, multiple sclerosis, organ transplantation, myocardial
CC   infarction, cardiovascular disease, stroke, renal failure, oxidative
CC   stress-related neurodegenerative disorders (e.g. amylotrophic lateral
CC   sclerosis, Parkinson's disease and Leigh syndrome), cancer,
CC   cardiomyopathies, ischemic disorders, inflammatory disorders, diabetes
CC   mellitus, fibrotic and mesangial disorders. The proteins may also be
CC   useful for cell growth regulation (e.g. in wound healing), T cell
CC   activation, mitosis control, and as immunosuppressants.
XX
SQ   Sequence   1233 AA;


  Query Match             25.6%;  Score 97.5;  DB 20;  Length 1233;
  Best Local Similarity   39.2%;  Pred. No. 0.051;
  Matches   29;  Conservative   17;  Mismatches   17;  Indels   11;  Gaps    4;

Qy       2 RQRDPQQQYEQCQK--RCQRRETEPRHMQICQQRCERRYEKEKRK----QQKRYEEQQR- 54
           ||:  :|| || ::    |||| | |  |  :||  || ::|||:    :::| ||::|
Db     394 rqkrieqqkeqrrrleeqqrrerearrqqereqr--rreqeekrrleelerrrkeeeerr 451

Qy      55 --EDEEKYEERMKE 66
             |:|::  || :|
Db     452 raeeekrrvereqe 465


RESULT  11
Y55931
ID   Y55931 standard; Protein; 1239 AA.
XX
AC   Y55931;
XX
DT   18-FEB-2000  (first entry)
XX
DE   Human ZC1 protein.
XX
KW   Antirheumatic; antiathritic; antiinflammatory; antiallergic; osteopathic;
KW   antipsoriatic; antiarteriosclerotic; antiasthmatic; immunosupressive;
KW   neuroprotective; cardiant; cerebroprotective; cytostatic; antidiabetic;
KW   vulnery; STE20; protein kinase; STLK2; STLK3; STLK4; STLK5, STLK6, STLK7;
KW   ZC1, ZC2, ZC3, ZC4, KHS2, SULU1, SULU3, GEK2, PAK4; PAK5; antagonist;
KW   antibody; gene therapy; rheumatoid arthritis; artherosclerosis; asthma;
KW   inflammatory bowel disease; Crohn's disease; osteoarthritis; psoriasis;
KW   rhinitis; autoimmunity; organ transplantation; multiple sclerosis;
KW   myocardial infarction; cardiovascular disease; stroke; renal failure;
KW   oxidative stress-related neurodegenerative disorder; Parkinson's disease;
KW   amylotrophic lateral sclerosis; Leigh syndrome; cancer; cardiomyopathy;
KW   ischemic disorder; inflammation; diabetes mellitus; fibrosis; mitosis;
KW   mesangial disorder; growth regulation; wound healing; T cell activation;
```

```
KW   immunosuppressant.
XX
OS   Homo sapiens.
XX
PN   WO9953036-A2.
XX
PD   21-OCT-1999.
XX
PF   13-APR-1999;   99WO-US08150.
XX
PR   14-APR-1998;   98US-0081784.
XX
PA   (SUGE-) SUGEN INC.
XX
PI   Plowman G,  Martinez R,  Whyte D;
XX
DR   WPI; 1999-611301/52.
DR   N-PSDB; Z40483.
XX
PT   Novel kinase-related polypeptides used for the diagnosis and treatment
PT   of kinase-related diseases and disorders  -
XX
PS   Claim 11; Page 269-274; 387pp; English.
XX
CC   This sequence represents a novel STE20-related protein kinase. The
CC   invention relates to nucleic acid molecule encoding a kinase polypeptide
CC   selected from STLK2, STLK3, STLK4, STLK5, STLK6, STLK7, ZC1, ZC2, ZC3,
CC   ZC4, KHS2, SULU1, SULU3, GEK2, PAK4 and PAK5. The proteins are used to
CC   identify agonists and antagonists, and to raise antibodies. The
CC   polynucleotides are useful in gene therapy protocols.The polynucleotides,
CC   polypeptides, antibodies, antagonists and agonists may be used to treat
CC   diseases such as immune-related disorders and diseases (e.g. rheumatoid
CC   arthritis, artherosclerosis, chronic inflammatory bowel disease (e.g.
CC   Crohn's disease), asthma, osteoarthritis, psoriasis, atherosclerosis,
CC   rhinitis, autoimmunity, and organ transplantation, chronic inflammatory
CC   pelvic disease, multiple sclerosis, organ transplantation, myocardial
CC   infarction, cardiovascular disease, stroke, renal failure, oxidative
CC   stress-related neurodegenerative disorders (e.g. amylotrophic lateral
CC   sclerosis, Parkinson's disease and Leigh syndrome), cancer,
CC   cardiomyopathies, ischemic disorders, inflammatory disorders, diabetes
CC   mellitus, fibrotic and mesangial disorders. The proteins may also be
CC   useful for cell growth regulation (e.g. in wound healing), T cell
CC   activation, mitosis control, and as immunosuppressants.
XX
SQ   Sequence   1239 AA;

  Query Match             25.6%;  Score 97.5;  DB 20;  Length 1239;
  Best Local Similarity   39.2%;  Pred. No. 0.051;
  Matches   29;  Conservative   17;  Mismatches   17;  Indels   11;  Gaps    4;

Qy       2 RQRDPQQQYEQCQK--RCQRRETEPRHMQICQQRCERRYEKEKRK----QQKRYEEQQR- 54
           ||:  :|| || ::    |||| | |  |  :||  || ::|||:    :::| ||::|
Db     395 rqkrieqqkeqrrrleeqqrrerearrqqereqr--rreqeekrrleelerrrkeeeerr 452

Qy      55 --EDEEKYEERMKE 66
             |:|::  || :|
Db     453 raeeekrrvereqe 466


RESULT  12
Y07067
ID   Y07067 standard; Protein; 482 AA.
XX
AC   Y07067;
XX
DT   02-JUL-1999  (first entry)
XX
DE   Renal cancer associated antigen precursor sequence.
XX
KW   Cancer associated antigen; diagnosis; research; treatment; human;
KW   breast cancer; colon cancer; gastric cancer; renal cancer; lung cancer;
KW   prostate cancer.
XX
OS   Homo sapiens.
XX
PN   WO9904265-A2.
XX
PD   28-JAN-1999.
XX
PF   15-JUL-1998;   98WO-US14679.
XX
PR   22-JUN-1998;   98US-0102322.
PR   17-JUL-1997;   97US-0896164.
PR   10-OCT-1997;   97US-0061599.
PR   10-OCT-1997;   97US-0061765.
PR   10-OCT-1997;   97US-0948705.
PR   11-OCT-1997;   97GB-0021697.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
XX
PI   Chen Y,  Gout I,  Gure A,  O'Hare M,  Obata Y,  Old LJ;
PI   Pfreundschuh M,  Sahin U,  Scanlan MJ,  Stockert E;
PI   Tureci O;
XX
DR   WPI; 1999-132448/11.
XX
PT   New isolated cancer associated nucleic acids and polypeptides -
PT   isolated using sera from cancer patients, used to develop products
PT   for the diagnosis, monitoring or treatment of cancers
XX
PS   Disclosure; Page 467-468; 787pp; English.
XX
CC   The invention relates to a method for diagnosing a disorder characterised
CC   by expression of a human cancer associated antigen precursor coded for by
CC   a nucleic acid molecule (NAM). The method comprises: (a) contacting a
CC   biological sample isolated from a subject with an agent that specifically
CC   binds to the NAM, an expression product or a fragment of an expression
CC   product complexed with an HLA molecule; and (b) determining the
CC   interaction between the agent and the NAM or the expression product as a
CC   determination of the disorder. The products and methods can be used in
CC   the diagnosis, monitoring, research, or treatment of conditions
CC   characterised by the expression of various cancer associated antigens.
CC   The invention provides nucleic acid sequences and encoded polypeptides
CC   which are cancer associated antigen precursors expressed in human breast
CC   cancer, renal cancer, colon cancer, gastric cancer, prostate cancer and
CC   lung cancer.
XX
SQ   Sequence   482 AA;

  Query Match             25.5%;  Score 97;  DB 20;  Length 482;
  Best Local Similarity   29.7%;  Pred. No. 0.022;
  Matches   19;  Conservative   25;  Mismatches   20;  Indels    0;  Gaps    0;

Qy       3 QRDPQQQYEQCQKRCQRRETEPRHMQICQQRCERRYEKEKRKQQKRYEEQQREDEEKYEE 62
           :|: |: :|:   | |: : | |  :  ::  ::| |:::|| ::::|||||:: |: |:
Db      65 erergrlheewllreqkaqeefrikkekeeaakkrqeeqerklkeqweeqqrkereeeeq 124

Qy      63 RMKE 66
           : :|
Db     125 krqe 128


RESULT  13
Y55932
ID   Y55932 standard; Protein; 1297 AA.
XX
AC   Y55932;
XX
DT   18-FEB-2000  (first entry)
XX
DE   Human ZC2 protein.
XX
KW   Antirheumatic; antiathritic; antiinflammatory; antiallergic; osteopathic;
KW   antipsoriatic; antiarteriosclerotic; antiasthmatic; immunosupressive;
```

```
KW   neuroprotective; cardiant; cerebroprotective; cytostatic; antidiabetic;
KW   vulnery; STE20; protein kinase; STLK2; STLK3; STLK4; STLK5, STLK6, STLK7;
KW   ZC1, ZC2, ZC3, ZC4, KHS2, SULU1, SULU3, GEK2, PAK4; PAK5; antagonist;
KW   antibody; gene therapy; rheumatoid arthritis; artherosclerosis; asthma;
KW   inflammatory bowel disease; Crohn's disease; osteoarthritis; psoriasis;
KW   rhinitis; autoimmunity; organ transplantation; multiple sclerosis;
KW   myocardial infarction; cardiovascular disease; stroke; renal failure;
KW   oxidative stress-related neurodegenerative disorder; Parkinson's disease;
KW   amylotrophic lateral sclerosis; Leigh syndrome; cancer; cardiomyopathy;
KW   ischemic disorder; inflammation; diabetes mellitus; fibrosis; mitosis;
KW   mesangial disorder; growth regulation; wound healing; T cell activation;
KW   immunosuppressant.
XX
OS   Homo sapiens.
XX
PN   WO9953036-A2.
XX
PD   21-OCT-1999.
XX
PF   13-APR-1999;   99WO-US08150.
XX
PR   14-APR-1998;   98US-0081784.
XX
PA   (SUGE-) SUGEN INC.
XX
PI   Plowman G,  Martinez R,  Whyte D;
XX
DR   WPI; 1999-611301/52.
DR   N-PSDB; Z40484.
XX
PT   Novel kinase-related polypeptides used for the diagnosis and treatment
PT   of kinase-related diseases and disorders -
XX
PS   Claim 11; Page 274-278; 387pp; English.
XX
CC   This sequence represents a novel STE20-related protein kinase. The
CC   invention relates to nucleic acid molecule encoding a kinase polypeptide
CC   selected from STLK2, STLK3, STLK4, STLK5, STLK6, STLK7, ZC1, ZC2, ZC3,
CC   ZC4, KHS2, SULU1, SULU3, GEK2, PAK4 and PAK5. The proteins are used to
CC   identify agonists and antagonists, and to raise antibodies. The
CC   polynucleotides are useful in gene therapy protocols.The polynucleotides,
CC   polypeptides, antibodies, antagonists and agonists may be used to treat
CC   diseases such as immune-related disorders and diseases (e.g. rheumatoid
CC   arthritis, artherosclerosis, chronic inflammatory bowel disease (e.g.
CC   Crohn's disease), asthma, osteoarthritis, psoriasis, atherosclerosis,
CC   rhinitis, autoimmunity, and organ transplantation, chronic inflammatory
CC   pelvic disease, multiple sclerosis, organ transplantation, myocardial
CC   infarction, cardiovascular disease, stroke, renal failure, oxidative
CC   stress-related neurodegenerative disorders (e.g. amylotrophic lateral
CC   sclerosis, Parkinson's disease and Leigh syndrome), cancer,
CC   cardiomyopathies, ischemic disorders, inflammatory disorders, diabetes
CC   mellitus, fibrotic and mesangial disorders. The proteins may also be
CC   useful for cell growth regulation (e.g. in wound healing), T cell
CC   activation, mitosis control, and as immunosuppressants.
XX
SQ   Sequence   1297 AA;

  Query Match             25.5%;  Score 97;  DB 20;  Length 1297;
  Best Local Similarity   33.7%;  Pred. No. 0.061;
  Matches   31;  Conservative   12;  Mismatches   17;  Indels   32;  Gaps    5;

Qy       1 NRQRDP---QQQYEQCQKRCQRRETEPRHMQICQQRCER--------------RYEKEK 42
           |::|     :|| ||     |:|| |    |:  :| :|               | |||
Db     327 nkersealrrqqleq-----qqreneehkrqllaerqkrieeqkeqrrrleeqqrrekel 381

Qy      43 RKQQKR-----YEEQQREDEEK----YEERMK 65
           ||||:|     |||| | :||:    :|:  |
Db     382 rkqqereqrrhyeeqmrreeerrraeheqeyk 413


RESULT  14
Y85263
```

```
ID   Y85263 standard; Protein; 1360 AA.
XX
AC   Y85263;
XX
DT   29-JUN-2000  (first entry)
XX
DE   Human protein kinase KIAA0551 amino acid sequence.
XX
KW   Protein kinase; KIAA0551; neuropathy; neuropathic pain; inflammation;
KW   chronic pain; neurodegenerative disorder; neurotraumatic disorder;
KW   Parkinson's disease; Alzheimer's disease; ischaemic disease.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 290
FT                   /note= "Encoded by GA"
XX
PN   WO200015805-A1.
XX
PD   23-MAR-2000.
XX
PF   10-SEP-1999;   99WO-GB03017.
XX
PR   10-SEP-1998;   98GB-0019779.
PR   29-MAR-1999;   99GB-0007261.
XX
PA   (SMIK ) SMITHKLINE BEECHAM PLC.
XX
PI   Bingham S,  Case P,  Lawson SN,  Newton RA,  Rausch OL,  Reith AD;
PI   Sanger GJ;
XX
DR   WPI; 2000-271443/23.
DR   N-PSDB; A10669.
XX
PT   Isolated human KIAA0551 polynucleotide and polypeptide, useful for
PT   treating e.g. neuropathies, neuropathic pain, inflammatory and chronic
PT   pain and neurodegenerative conditions -
XX
PS   Claim 2; Page 41; 48pp; English.
XX
CC   This sequence represents the human protein kinase KIAA0551 amino acid
CC   sequence. The nucleotide sequence was isolated from a human foetal brain
CC   cDNA library. The rat KIAA0551 mRNA is upregulated in dorsal root ganglia
CC   during sciatic neuropathy (a procedure accompanied by increased
CC   sensitivity to somatic pain) which indicates a role for KIAA0551 in the
CC   regulation of molecular processes associated with neuropathy and
CC   neuropathic pain. The KIAA0551 protein may be used for treating
CC   neuropathies, neuropathic pain, inflammatory and chronic pain,
CC   neurodegenerative conditions such as Parkinson's disease and Alzheimer's
CC   disease, and neurotraumatic disease or ischaemic disease damage in
CC   cardiac tissue.
XX
SQ   Sequence   1360 AA;

  Query Match             25.2%;  Score 96;  DB 21;  Length 1360;
  Best Local Similarity   35.4%;  Pred. No. 0.08;
  Matches   29;  Conservative   10;  Mismatches   15;  Indels   28;  Gaps    4;

Qy       1 NRQRDP---QQQYEQCQKRCQRRETEPRHMQICQQRCER--------------RYEKEK 42
           |::|     :|| ||     |:|| |    |:  :| :|               | |||
Db     361 nkersealrrqqleq-----qqreneehkrqllaerqkrieeqkeqrrrleeqqrrekel 415

Qy      43 RKQQKR-----YEEQQREDEEK 59
           ||||:|     |||| | :||:
Db     416 rkqqereqrrhyeeqmrreeer 437


RESULT  15
Y55933
ID   Y55933 standard; Protein; 1326 AA.
XX
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```
AC   Y55933;
XX
DT   18-FEB-2000  (first entry)
XX
DE   Human ZC3 protein.
XX
KW   Antirheumatic; antiathritic; antiinflammatory; antiallergic; osteopathic;
KW   antipsoriatic; antiarteriosclerotic; antiasthmatic; immunosupressive;
KW   neuroprotective; cardiant; cerebroprotective; cytostatic; antidiabetic;
KW   vulnery; STE20; protein kinase; STLK2; STLK3; STLK4; STLK5, STLK6, STLK7;
KW   ZC1, ZC2, ZC3, ZC4, KHS2, SULU1, SULU3, GEK2, PAK4; PAK5; antagonist;
KW   antibody; gene therapy; rheumatoid arthritis; artherosclerosis; asthma;
KW   inflammatory bowel disease; Crohn's disease; osteoarthritis; psoriasis;
KW   rhinitis; autoimmunity; organ transplantation; multiple sclerosis;
KW   myocardial infarction; cardiovascular disease; stroke; renal failure;
KW   oxidative stress-related neurodegenerative disorder; Parkinson's disease;
KW   amylotrophic lateral sclerosis; Leigh syndrome; cancer; cardiomyopathy;
KW   ischemic disorder; inflammation; diabetes mellitus; fibrosis; mitosis;
KW   mesangial disorder; growth regulation; wound healing; T cell activation;
KW   immunosuppressant.
XX
OS   Homo sapiens.
XX
PN   WO9953036-A2.
XX
PD   21-OCT-1999.
XX
PF   13-APR-1999;   99WO-US08150.
XX
PR   14-APR-1998;   98US-0081784.
XX
PA   (SUGE-) SUGEN INC.
XX
PI   Plowman G,  Martinez R,  Whyte D;
XX
DR   WPI; 1999-611301/52.
DR   N-PSDB; Z40485.
XX
PT   Novel kinase-related polypeptides used for the diagnosis and treatment
PT   of kinase-related diseases and disorders
XX
PS   Claim 11; Page 278-283; 387pp; English.
XX
CC   This sequence represents a novel STE20-related protein kinase. The
CC   invention relates to nucleic acid molecule encoding a kinase polypeptide
CC   selected from STLK2, STLK3, STLK4, STLK5, STLK6, STLK7, ZC1, ZC2, ZC3,
CC   ZC4, KHS2, SULU1, SULU3, GEK2, PAK4 and PAK5. The proteins are used to
CC   identify agonists and antagonists, and to raise antibodies. The
CC   polynucleotides are useful in gene therapy protocols.The polynucleotides,
CC   polypeptides, antibodies, antagonists and agonists may be used to treat
CC   diseases such as immune-related disorders and diseases (e.g. rheumatoid
CC   arthritis, artherosclerosis, chronic inflammatory bowel disease (e.g.
CC   Crohn's disease), asthma, osteoarthritis, psoriasis, atherosclerosis,
CC   rhinitis, autoimmunity, and organ transplantation, chronic inflammatory
CC   pelvic disease, multiple sclerosis, organ transplantation, myocardial
CC   infarction, cardiovascular disease, stroke, renal failure, oxidative
CC   stress-related neurodegenerative disorders (e.g. amylotrophic lateral
CC   sclerosis, Parkinson's disease and Leigh syndrome), cancer,
CC   cardiomyopathies, ischemic disorders, inflammatory disorders, diabetes
CC   mellitus, fibrotic and mesangial disorders. The proteins may also be
CC   useful for cell growth regulation (e.g. in wound healing), T cell
CC   activation, mitosis control, and as immunosuppressants.
XX
SQ   Sequence   1326 AA;


  Query Match             25.1%;  Score 95.5;  DB 20;  Length 1326;
  Best Local Similarity   35.6%;  Pred. No. 0.087;
  Matches   26;  Conservative   18;  Mismatches   20;  Indels    9;  Gaps    4;

Qy       2 RQRDPQQQYE----QCQKRCQRRETEPRHMQICQQRCERRYEK-EKRKQQKRYEEQQ--- 53
           :||||:    :    | |:| : :: | | ::  ||| ||   | ::::||:| |: |
Db     345 qqrdpeahikhllhqrqrrieeqkeerrrvee-qqrrereqrklqekeqqrrledmqalr 403

Qy      54 REDEEKYEERMKE 66
           ||:| :  || :|
Db     404 reeerrqaereqe 416


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Job time: 242 sec
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